Effect of Ability Grouping on Student Math Achievement in Third Grade

Ability grouping and its effect on student achievement is a continuing topic of research and debate in education for many years, and research findings have been inconclusive. The search for effective grouping in math instruction continues. This was a quasi-experimental action research study with the pretest/posttest group comparison design. It took place in an existing classroom of sixteen students that represent various socio-economic backgrounds, academic levels, and cultural influences. Students within the already established classroom were purposefully assigned to either a homogeneous or heterogeneous math small group. There were two homogeneous and two heterogeneous groups.. The homogeneous groups were organized into below and above grade level. The heterogeneous groups were mixed to represent students at each academic level.

The study took place over the duration of one math unit spanning a four week period. The pretest was given prior to introducing the new concepts, and the posttest was given at the very end of the unit. Each group met with the teacher for twenty minutes twice per week for the duration of the study. This small group instruction was in addition to the twenty minute whole group lessons given to the students. Instructional content was specifically structured based on Common Core Performance Standards for third grade students. Homogeneous groups were given instruction based on their academic level, and heterogeneous groups were given instruction to review previously taught concepts to all students present in the group. Both of the heterogeneous groups received the same instruction on the same standard. At the end of the unit, a posttest was given and statistically analyzed in comparison to the pretest.

The unit was focused on the third grade standards for fractions. Students are expected to

have understanding of fractions and the ability to compare and determine equivalent fractions. The pretest and posttest assessed these skills along with other review skills such as graphing. After the pretest was given, students began small group meetings. The first meeting for all groups was to review the general definition of a fraction. The focus then became introducing, guiding, and practicing comparing fractions and finding equivalents. Manipulatives, both physical and online, were used for this instruction. Each group received the same instruction on the same topic and with the same resources, however, the pacing of the lessons was differentiated based on the needs of each group. At the end of the four week period, the posttest was given. Pretest/posttest scores and growth of students in both grouping types were analyzed for comparison, and classroom implications are also discussed.

Overall, the students in all groups showed fairly consistent gains. However, for lower achieving students, the point gain was slightly higher for students who participated in the heterogeneous group. For higher achieving students, the point gain was slightly higher for the homogeneous group, and the average achieving group had similar point gains to all other groups. This may indicate that struggling students are more successful when they are able to learn from their peers and that students who excel with grade level standards perform even better when given extension opportunities and independence in their learning.

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